

+ XXXIII.—*Notes on the Birds of Michalaski, Norton Sound.*
By Surgeon EDWARD ADAMS.

[THIS paper was sent us by Mr. H. Stevenson, to whom it was intrusted by relatives of the late Mr. Adams. As it refers to the birds of a region that has only recently been studied by American naturalists, and as the biographical notes are of considerable interest, we have no hesitation in publishing the paper as it stands. The chief authorities on the birds of these islands of the Pacific coast of North-western America are Messrs. W. H. Dall and H. M. Bannister, whose "List of the Birds of Alaska, with Biographical Notes," published in the 'Transactions' of the Chicago Academy of Sciences, is doubtless familiar to many of the readers of 'The Ibis.' We have added references to this paper where the species are included in Mr. Adams's list. It will be observed, from the date when Mr. Adams's observations were made (1850-51), that, had this paper been published at the time it was written, several interesting discoveries of more recent explorers would have been anticipated.

Mr. Stevenson has kindly supplied us with the brief memoir of Mr. Adams which we now subjoin:—

"THE LATE MR. EDWARD ADAMS.

"The following particulars of the brief but eventful career of the talented author of this paper are gathered from a memoir which appeared in the 'Bury and Norwich Post' for December 17, 1856; Mr. Adams's death having occurred at Sierra Leone on the 12th of November of that year, at the early age of 32.

"The paper itself, found among other MSS. and drawings, was recently brought under the notice of Mr. Stevenson by Mr. William Adams, a brother of the deceased, now residing in Norwich.

"Mr. Edward Adams was born at Great Barton, near Bury St. Edmunds, Suffolk, on the 24th of February, 1824, and was educated for the medical profession, passing the usual examinations with honour and credit. Ardently fond

of natural history, he devoted his leisure hours to its study; and his talents in this respect had an important bearing upon his subsequent appointments.

“In 1847 he obtained a commission in the Navy as Assistant-Surgeon, and was at once appointed to Haslar Hospital, and afterwards to the Naval Hospital at Devonport; but as soon as the expedition in search of Franklin was determined upon in the winter of 1847–48, under Sir James Ross, Mr. Adams volunteered both as Assistant-Surgeon and Naturalist, and sailed for the Arctic seas in the ‘Investigator’ (Captain Maclure) on the 8th of May, 1848. This search proved a fruitless one; and in eighteen months’ time he returned in his ship to England, in November 1849. His time, however, had not been spent unprofitably, as his collections in ornithology and geology, as well as his beautiful drawings of places of interest visited, fully testified, and for which he received the thanks of the Hydrographer of the Navy, Admiral Beaufort. Within barely three months of his landing in England we again find Adams, in January 1850, on his way to the Polar regions, and on this occasion as Assistant-Surgeon and Naturalist on board the ‘Enterprise,’ in the expedition under Collinson and Maclure, once more fitted out in search of Franklin, by way of Behring’s Straits. The two ships forming the expedition parted company in the Straits; and after the discovery of the North-west Passage by Maclure, the ‘Enterprise’ put back, and wintering in China, again entered the ice in the following year. In October 1850 Mr. Adams was sent with Lieut. Barnard to Michalaski Redoubt, Norton Sound, and thence, in search of the missing expedition, overland to Darabin, the northernmost part of the Koupac river, with a party of the ship’s crew and natives, and only escaped, by taking a different route, being murdered, as poor Barnard and the Russian commander at the fort were, by hostile Indians. Having rejoined his ship in June 1851, he accompanied it for the remainder of the voyage, spending four years in those dreary regions, and, in pursuit of his favourite study, formed a considerable collection of birds and drawings, most of which are stated to be deposited

in the British Museum, whilst others were presented to his ornithological friends, particularly to Mr. John Gould and the late Mr. G. R. Gray*. The 'Enterprise' reached England in May 1855; but during her stay in China on her way home, the hot climate greatly affected Mr. Adams, and a severe attack of inflammation of the lungs nearly cost him his life. After two months' entire rest he next prepared himself to pass his examination as full Surgeon, and being duly gazetted to that rank, was appointed to the steam-sloop 'Hecla,' and joined that vessel at Devonport in November 1855. In May 1856 she was ordered to the west coast of Africa; and though with a presentiment in his own mind that his health would not stand the climate, Mr. Adams did not shrink from his duty. His fears, however, were but too well grounded. Scarcely a month after the 'Hecla's' arrival at Sierra Leone he was compelled to be invalided on shore whilst the ship made a cruise of three weeks; but on her return to that port he was found so much worse that he was again conveyed on board, with a view to his immediate return to England. This, however, was not to be! Only a day or two later an attack of typhus proved rapidly fatal in his already emaciated condition; and the remains of this able medical officer and accomplished naturalist were interred in the cemetery at Sierra Leone, with military honours, the Governor and the whole garrison attending."—EDD.]

BLUE-THROATED WARBLER. *Cyanecula suecica* (Linn.).
Soo-kuk, Eski.

On the 5th of June I met with seven of these birds near the redoubt, feeding about some willow-bushes. They were very wild, and it was with some difficulty that I procured a specimen.

I could not find them afterwards; and the natives were evidently not well acquainted with them.

[We have not been able to trace Dr. Adams's specimen, which is greatly to be regretted, as no other instance of a bird of this genus having been found on the American continent is on record.]

[* Mr. Gray dedicated *Colymbus adamsi* (P. Z. S. 1859, p. 167, to the commemoration of Mr. Adams's labours in ornithology.—EDD.]

BLACK-CAP TITMOUSE. *Parus atricapillus*, Linn.

Chik-a-ki-perc, Eski.

[*Parus atricapillus*, Dall & Bann. p. 280.]

A few Black-cap Tits were to be seen all the winter about the patches of dwarf birch and willow on the hill-sides. I could not learn that they breed here, nor did I see any during the summer; but they probably remain all the year.

THE YELLOW WAGTAIL. *Motacilla flava*, Linn.

[*Budytes flava*, Dall & Bann. p. 277; Baird, *tom. cit.* p. 312.]

This beautiful bird makes its appearance in the beginning of June, and very soon commences to build. I found a few on the 5th of June, which were feeding about the tops of some willow-bushes, and in the marsh near them. On the 12th I found the first nest; it was placed amongst the grass on the steep bank of a ravine, in a small hollow, so that the nest was completely embedded in earth. It was lined with bents and hair. It contained six eggs, of a pale brownish white colour, rather darker at the large end, where there were a few faint streaks of brown. I afterwards found other nests placed in similar situations.

AMERICAN BARN-SWALLOW. *Hirundo americana*, Wilson.

Jo-lu-kar-nár-uk, Eski.

[*Hirundo horreorum*, Barton; Dall & Bann. p. 279.]

Early on the morning of the 31st of May, 1851, eight or ten of these birds arrived at Michalaski. I had been wandering about the neighbourhood the whole of the previous day, and did not meet with one of them; so that they must have journeyed in a flock. They immediately set to work about repairing their old nests, which were placed in an old out-house, under the eaves of the buildings, and in some of the loop-holes for musketry in the block-houses. When they find a horizontal surface on which to build, the nest is always very slight and shallow; but those under the eaves are large and well built, very much resembling those of *Hirundo urbica*, but open at the top. There were so many old nests that very few of them built new ones, merely repairing and

relining the old ones. The nest is built entirely of mud, and lined with a thick bed of feathers. One pair that had been frequently disturbed whilst building in an exposed situation, left their unfinished nest and built another in the root of a tuft of long grass which hung down from the inside of the roof of an outhouse. This one they concealed so artfully, by suspending long straws from its outer surface, that it was only by watching the birds that I discovered it. At the time of the arrival of these birds the weather was fine and warm, and their numbers were soon greatly increased; but in a few days the weather became cold and wet, and all the Swallows left off building. One pair left their half-finished nest in an outhouse, and built upon a rafter close by it a large loose nest of straw and feathers, well lined with the latter (there was no mud), and partly arched over with straw. In this nest the two birds used to sit, side by side, the whole day long. As soon as the warm weather returned they left their warm retreat, and I never saw them use it afterwards. It was evidently built merely as a temporary resort during the cold weather; and it was the only one I saw; the other birds sat huddled together upon the rafters.

The eggs vary very much in size and shape, as well as in the colour and disposition of the spots. The measurements vary from $8\frac{1}{2}$ to 10 lines in length; but the breadth is generally about $6\frac{1}{2}$ lines. The spots are sometimes small and partly blotched, sometimes distinct, and sometimes much larger at the large end, around which they occasionally form a ring. Some eggs are spotted with dark brown, some with reddish brown, and others with yellowish brown; and these varieties often occur in the same nest.

The favourite place for building was under the eaves of two outhouses which were only a few feet apart, and the most noisy place in the redoubt—the constant resort of women, children, and dogs. They often build in old deserted native huts; and at Port Clarence, in lat. $65^{\circ} 20' N.$, the furthest north that they appear to go, they were breeding in a cliff at some little distance from the sea.

Most of the nests had eggs in on the 19th of June, when

my observations on them ended. They are said by the Russians not to leave until the middle of September.

—WHITE-THROATED FINCH. *Fringilla pennsylvanica*, Lath.
Me-chók-chok-pi-e-nuk, Eski.

[*Zonotrichia albicollis* (Gm.) is the name to which the above synonym is applicable. The species, however, is very probably the western form *Z. gambeli*, which, according to Dall and Bannister (p. 284), is found on St. Michael's Island.]

A few of these birds arrived in the middle of May with the Lapland Buntings. They frequented the dry hillocks about the edges of the marshes, and are said to breed there; but I did not succeed in finding a nest.

—LESSER REDPOLE. *Linaria minor* (Gould).
Oke-wee-tár, Eski.

[*Ægiothus linaria*, Dall & Bann. p. 281.]

Small flocks of this bird arrived with the Snow-Bunting in October, and remained until the end of January, when they suddenly disappeared.

LAPLAND BUNTING. *Plectrophanes lapponica* (Gould).
Pig-git-tig-wuk, Eski.

[*Plectrophanes lapponica*, Dall & Bann. p. 283.]

Multitudes of these birds arrive in the middle of May, and occupy the whole extent of the marshes. Their pleasing song and sprightly manners make them universal favourites, and here, at least, they are never disturbed. Their song is short but lively, and is often uttered as they rise to a small height in the air and descend. They reminded one very much of the Tit-Lark. The nest is generally placed upon a little hillock in the marsh, sometimes touching the water; it is neatly woven with bents and hair, and lined with feathers. They lay five or six eggs, mottled with light olive-brown and dirty yellowish white, with streaks and a few spots of dark brown about the larger end. I found the first nest with eggs on the 1st of June.

They appear to feed principally on the seeds of the different grasses which abound in the marshes. I also found a few insects in some of their stomachs.

THE SNOW-BUNTING. *Plectrophanes nivalis* (Gould).

E-már-o-slik, Eski.

[*Plectrophanes nivalis*, Dall & Bann. p. 282.]

In the beginning of October these birds arrived in flocks, which remain, feeding upon the grass-seeds on the hills, until the middle of January. After this time only a few scattered individuals are met with; and by March they are all gone, except a very few that remain to breed on the tops of the highest hills.

+ RAVEN. *Corvus corax*.

Jo-lú-kok, Eski.

[*Corvus carnivorus*, Dall & Bann. p. 285.]

Two or three Ravens are to be seen about every native village all the year, where they dispute with the dogs for scraps of fish and meat. In the autumn they pilfer vast quantities of fish from the stages near the fishing-grounds, and occasionally surprise a mouse or small bird. In winter they roost during night in the sea-cliffs, generally selecting a well-sheltered nook, to which they return every evening.

They breed also in the cliffs; and in June I saw three full-fledged young, which had been procured there shortly before. Two of these were black; but the other was an albino. It was of a very light stone-colour, with white beak, legs, and claws; the shafts of the quill-feathers white; iris blue. The natives told me they had seen one some years before. They were keeping this as a pet.

✓ WHISKEY JACK. *Garrulus canadensis*.

Kobárno, Eski.

[*Perisoreus canadensis*, Dall & Bann. p. 286.]

This bird is not found in the immediate neighbourhood of Michalaski; but thirty miles to the northward the volcanic rock gives place to sandstone, and here the dwarf bushes attain the height of thirty feet, many of the birches increase to trees, and the white spruce first makes its appearance. This is the favourite country of this bird; and wherever a native hut has been erected in the woods he makes his appearance, in company with the Black-cap Tit. Three or four are to be seen

about every hut, where they pick up scraps of meat and fish from the stages. They are very tame and fearless, approaching either man or dog with the greatest confidence.

The short unpretending cry of this bird, and more noisy twittering of the Tit, are the only sounds that break the dreary silence of the woods in winter. The Three-toed Woodpecker (*Picus tridactylus*) also inhabits this district throughout the winter.

+ SHORT-EARED OWL. *Otus brachyotus*.

Muug-ar-ko-jee-wuk, Eski.

[*Brachyotus cassini*, Dall & Bann. p. 273.]

This bird arrived in the middle of May, and was frequently met with during the following month, in pairs and scattered individuals, about the marshes, where they were preying upon the small *Tringæ* and Lapland Buntings.

HARRIER. *Circus* — ?

Chik-kár-be-ah, Eski.

[Doubtless *C. hudsonicus*, see Dall & Bann. p. 272.]

Several mutilated specimens of a small Hawk were met with amongst the natives, and which, from the length of the tarsus, and the ruffled feathers around the head, were evidently of this genus.

They do not breed in this neighbourhood, but arrive in some numbers in the month of August, when they are often caught in a noose set upon the top of a post. They are not seen here in spring.

+ THE ROUGH-LEGGED BUZZARD. *Buteo lagopus*.

Puttoók, Eski. of Norton Island.

[*Archibuteo lagopus*, Dall & Bann. p. 272.]

One specimen only of this bird occurred, which was killed by a native whilst preying upon the carcass of a deer. They are said to be rarely met with, and in the autumn only.

+ SNOW-GOOSE. *Anser hyperboreus*.

Hung-oók, Eski.

[*Anser hyperboreus*, Dall & Bann. p. 274.]

The first of the Snow-Geese arrived on the 9th of May ;

and during the two following days they were passing over in large flocks of from 100 to 300. Immense numbers passed over on these two days ; and after that only a few stragglers were to be seen. The flocks followed one another quickly, and as soon as one large flock had gone another was seen advancing. The natives, as well as the Russians, told me that they pass over every year in this manner, and again return at the end of September, and at each season are only seen for three days (except a few stragglers). But the singular thing is that in the spring their flight is directed towards the south, and in the autumn to the north. The coast at this part of the Sound runs nearly north and south ; and in the spring migration the Geese come from the north and cut across the marshy land to the south of Michalaski, and then proceed down the coast. I have no doubt of the truth of the report, as I got the same tale from all, and saw them myself in the spring ; but the cause I could not discover, and can only imagine it to be a slight deviation from their direct northerly course, caused by the conformation of the land. None of the other Geese are seen in such numbers as these, nor are they so regular in their flight. The Snow-Geese generally pass over at a considerable height, and seldom alight except at night ; but the stragglers generally fly low, and are easily shot. Every bird seemed to be in full plumage, and in good condition. None of them remain to breed.

The Russians complained that there were very few Geese this year : one man shot eighteen one night, which was the only case of a large number being taken ; but they say they often get twenty or thirty in a single night in other years.

+ WHITE-FRONTED GOOSE. *Anser albifrons*.

Luk-luk, Eski.

[Probably *A. gambeli* of Dall & Bannister's paper (p. 294.)]

A few of these birds arrived as early as the 23rd of April ; but it was not until the first week in May that they became numerous. They do not congregate in such large flocks as most of the other Geese, and are more often met with singly or in small parties. A few remained to breed in company

with the Brent Geese ; but by far the greater number went further north.

WHITE-HEADED GOOSE. *Anser* — ?

Nud-jár-lik, Eski.

[Probably *Chloephaga canagica* of Dall & Bannister's paper (p. 296.)]

This bird, of which I can find no notice, I first met with at Port Clarence, and I mistook it for a young Snow-Goose. An old hunter at Michalaski, in enumerating the birds to me, told me of a Goose with a white head and a blue body. I thought it might be the Bernicle ; but then it had a yellow bill, and I was puzzled. He said that very few came, but generally some every year, and that they were excellent eating. On the 16th of May I came suddenly upon a flock of eight of them—their white heads conspicuous. I could not get within less than 200 yards without showing myself ; so I took out my glass to examine them at my leisure : they were standing just in the water at the edge of a lake, preening their feathers. They appeared to be about the size of *Anser albifrons*, but of a stouter and heavier build ; the head and about two inches of the neck perfectly white ; the back and wing-coverts greyish blue, with broad bars of black and narrow ones of white ; the lower part of the neck of the same colour ; belly and breast light dirty grey, darker on the flanks ; quills and tail black, or nearly so ; feet and bill pale reddish orange. They reminded me much of the *Anser leucopsis* (Flem.) ; but they were larger, had more white, and no black on the neck, and their bills and legs were red instead of black. When I had well examined them, I endeavoured to get within shot of them ; but they rose and I saw no more of them. The bird is well known to the natives ; and their name for it is derived from the word “ *Nud-jár-huk*,” a cap.

BRENT GOOSE. *Anser bernicla*.

Luk-loó-nuk, Eski.

[*Bernicla nigricans*, Dall & Bann. p. 295.]

Vast numbers of these birds arrive in the middle of May, in large flocks. The first I noticed on the 12th. They keep

much more to the sea than the other Geese ; and a large flock is seldom seen inland, except at the breeding-places. They keep along the coast, generally out of shot ; and their line of flight is directly north (in the spring).

They breed in the southern marshes with the Bernicle. The natives collect the eggs there, and bring boat-loads of them to Michalaski at the end of June. Although in good condition, they were rank and fishy, and by no means good eating. The Russians think them the best, as they do the fishy Sea-Ducks.

+ HUTCHINS'S BERNICLE GOOSE. *Anser hutchinsii*.
Muh-lár-nuk, Eski.

[*Anser hutchinsii*, Dall & Bann. p. 295.]

Arrived on the 8th of May ; and a considerable number remained to breed in the marshes. They came in small flocks, and by twos and threes. They were in good condition, but varied very much in weight. One shot on the 16th weighed rather less than three pounds, others nearly six pounds. In the immediate vicinity of Michalaski they were by no means numerous, the greater number remaining in the marshes about thirty miles to the south.

+ THE TRUMPETER SWAN. *Cygnus buccinator*.
Cóg-a-zook, Eski.

[*Cygnus buccinator*, Dall & Bann. p. 294.]

This was the only species of Swan I met with at Michalaski. The first appeared on the 30th of May ; but they were at no time numerous, from two to eight or ten keeping together. A few of them are said to breed here ; but most of them go further north.

+ MALLARD. *Anas boschas*.
Yu-gók-puk, Eski.

[*Anas boschas*, Dall & Bann. p. 296.]

A few straggling pairs made their way here on the 3rd of May. A few of them breed here. They frequented the marshes on the river-banks and the lakes. They are said not to come every year, but that generally a few are met with.

AMERICAN TEAL. *Anas crecca*, var. (Forster).

Ting-a-zo-me-ók, Eski.

[*Nettion carolinensis*, Dall & Bann. p. 297.]

They were not numerous about Michalaski ; but a few pairs were generally to be found about the most grassy of the lakes, where they were constantly playing about, ducking their heads, and catching insects from the surface of the water. They are late in their arrival ; I met with none until the 20th of May ; but they remained to breed.

+ PINTAIL DUCK. *Anas acuta*.

Nah-ling-eív-e-nuk, Eski.

[*Dafila acuta*, Dall & Bann. p. 297.]

These were the first of the Ducks to arrive (April 28th), and the only freshwater ones that were numerous. They frequented all parts of the marshes, but not in large flocks, seldom more than three or four being seen together. They were generally very wary ; and it was only by secreting myself in their lines of flight that I could get shots at them.

Their nests were placed in rough grass about the marshes, and carefully concealed, the eggs of a very pale green, almost white, and eight or nine in number.

They appear to become much attached to a place when they have once fixed upon it for their breeding-quarters. There was a small lake and spot of marsh close to Michalaski where two pairs of these birds had located themselves. It also happened that I was very often there for hours at a time. When I made my appearance the birds always rose from the lake, and never came within shot of me ; but they would not leave the place, and ultimately built their nest within a few feet of the lake. The natives use the long tail-feathers of this bird, as well as those of the Tern and Long-tailed Duck, to ornament the wooden shades which they wear over their eyes in summer.

+ AMERICAN WIDGEON. *Anas americana* (Wilson).

Ting-a-zó-me-ár, Eski.

[*Mareca americana*, Dall & Bann. p. 298.]

The Widgeon did not arrive till the 12th of May ; after-

wards a considerable number were always to be met with about the inland marshes. They seem to live very much upon insects, which they capture upon the water and about the rushes.

The small inland lakes were their principal places of resort ; and their nests were generally upon the grassy banks. The eggs are small, much elongated, and slightly larger at one end. Their colour is very pale sea-green.

+ SHOVELLER. *Anas clypeata.*

Yu-gók-puk, Eski.

[*Spatula clypeata*, Dall & Bann. p. 297.]

I only met with a single pair of Shovellers ; and none were killed by the Russians. The natives confounded it with the Mallard ; and nobody knows any thing of it ; so that it is probably very rare. It is the only bird with which I found the natives unacquainted.

+ AMERICAN SCAUP. *Fuligula mariloides.*

[Probably *Fulix affinis* of Dall & Bannister's paper (p. 298.)]

The first of these birds I shot on the 12th of May. They were not numerous ; nor did I ever observe them about the lakes. When about the marshes shooting I sometimes met with one or two flying about ; but all were males. Four specimens which I procured agreed in being much darker on the back than *Fuligula marila* ; and instead of pure white the belly was of a dirty greyish colour. In size they agreed with the measurements given in the 'Fauna Boreali-Americana,' except that they were longer in the tarsus.

+ AMERICAN SCOTER. *Ædemia americana* (Swains.).

Too-tár-lik, Eski.

[*Ædemia americana*, Dall & Bann. p. 300.]

These birds were rather late in their arrival ; I met with none until the 19th of May. Towards the end of the month several pairs had taken possession of the larger lakes near Michalaski ; here they remained to breed, seldom going out to sea, but keeping together in small flocks in the middle of the lake. Their nests were well secreted in the clefts and hollows about the steep banks of the lakes, close to the water ;

they were built of coarse grass, and well lined with feathers and down. They had not laid when I last examined the nests.

+ LONG-TAILED DUCK. *Harelda glacialis*.

Ad-le-guk-lú-luk, Eski.

[*Harelda glacialis*, Dall & Bann. p. 298.]

First appeared on the 7th of May, when scarcely any of them had completed their spring moult—white feathers about the head and scapulars yet remaining. They were by no means numerous, and generally only in pairs. They bred about the inland marshes. The nest is like that of other Sea-Ducks. The eggs, six to nine in number, were very long, measuring 2 in. 3 lin. by 1 in. 5 lin. Colour rather dark olive-green. One of my specimens had the red patch remaining on the bill.

+ BLUE-EYED DUCK.

Ong-óo, Eski.

[*Lampronetta fischeri*, Brandt; Gray, P. Z. S. 1855, p. 212, pl. 108; Dall & Bann. p. 299.]

Three young birds (which I have called as above, for the sake of distinction) were shot out of a flock on the 28th of May. One only was a male, immature, and too much shattered by the shot to be worth preserving, as I expected to get more; however, I saved the head and neck. The whole plumage was of rather a light-brown colour, with white streaks beginning to appear on the scapulars, which were long, but only slightly curved; the feathers on the occiput and nape elongated, and those around the eye radiating from it, and apparently assuming a greyish metallic colour; quills and tail-feathers dark greyish brown; bill wine-yellow, shading into horn-colour at the tip, nail horn-colour; legs and toes dirty yellow; webs dusky, resembling those of the King Eider (*Somateria spectabilis*); bill broad and depressed, pitted near the nail, compressed just before the edge of the bill joins the nail, nail of moderate size; frontal feathers encroaching upon the bill as far as the front of the nostrils, and ending in a

semicircular projection ; line of the feathers sloping from this, behind the nostrils, to the rictus ; no appearance of lobes : feet as in *Somateria spectabilis* ; iris sky-blue.

The measurements of the male were as follows :—Expanse of wing 34" ; total length 20" 8" ; bill above 11" , bill to rictus 2" 3" ; tarsus 1" 10" , middle toe and nail 2" 9" , hind toe and nail 11" ; tail 2" 9" ; wing 9" 6" .

† BLACK-THROATED EIDER DUCK. *Somateria* — ?

Mit-hok, Eski.

[*Somateria v-nigrum*, G. R. Gray, P. Z. S. 1855, p. 211, pl. 107 ; Dall & Bann. p. 300.]

The first of these birds I met with on the 10th of May ; and soon after they became pretty numerous. They frequented all the marshes, but were generally flying about ; they seldom alighted on a lake, coming straight in from the sea, generally along the river-course ; they took a few turns about the marshes, and again went out to sea. They soon fixed upon their breeding-places ; and their nests were scattered over the whole of the marshes. One nest was within thirty yards of the fort, in the midst of children and dogs ; the old one built her nest and laid four eggs before she was discovered. Yet they are very wary and difficult to approach. On the wing they fly in a straight line, and appear stupid, often flying within a few yards of the shooter. They are very swift on the wing, and carry off a great quantity of shot.

One pair, which I watched very particularly, built their nest in a swampy hollow between two small lakes, about twenty yards from one of them. It was placed in the midst of tall gass, and built of rushes and grass, and well lined with feathers and down. By the latter end of the month they had laid six eggs ; and the female then began to sit.

The male assisted in building the nest, but not in the process of incubation. Whilst building they worked only very early in the morning ; but when the female began to lay, both of them came in from seaward a little before noon, and after a few turns round, to see that all was right, both of them alighted in the lake. Here they remained some little time,

and then the female walked off to her nest; and very soon after the male went out to sea. In about an hour he came back to the lake; and his mate then joined him; but I never saw her leave the nest until she heard him cooing on the lake. They remained a short time on the lake playing about and cooing, and then again went out to sea, and did not return until the next day. When the old one began to sit the male came in every day and took her out to sea, and again accompanied her back to the lake; but I never saw him approach the nest. I left Michalaski before the eggs were hatched.

Their principal food here is mussels and other small shellfish, for which they dive in from three to six fathoms of water. One day I counted from the fort 206 of them feeding along a tide-line in the bay; out of the whole number four only were females. Their note very much resembles the cooing of the Wood-Pigeon often repeated.

In the general colour of the plumage the male resembles the common Eider (*Somateria mollissima*), except about the head, where the white of the cheeks shades gradually into the green which separates it from the black of the upper part of the head. The white line running backwards from the eye is wanting; but that separating the green feathers on the nape is present. It has a V-shaped black mark under the throat, similar to that of *Somateria spectabilis*; but the fork extends further backwards. The bill is orange at the base, and shading into gamboge-yellow at the margin, which is of a yellowish horn-colour. The legs are dirty yellow, with a shade of orange, the webs dusky. The female very much resembles the female of the King Duck; but the spots and blotches about the back and scapulars are larger; the bill is dark greenish olive, horn-coloured nail; legs and toes dusky dirty-looking yellow, with dusky webs; iris brown in both.

In form it differs much from the common Eider. The head is larger and more clumsy, and has the supra-orbital glands more developed, and forming a prominent swelling over the eyes. The bill is wider and more elevated at the base; and the frontal processes end in very sharp points in-

stead of the rounded ones of the common Eider. The neck is shorter and thicker, and the body larger and stouter. Altogether it has a heavier and more clumsy appearance than *Somateria mollissima*.

The eggs, generally six or seven in number, are of a pale sea-green colour, with a tinge of olive.

They seldom weigh less than four pounds, but sometimes six pounds.

+ RED-BREASTED MERGANSER. *Mergus serrator*.

Pi-gék, Eski.

[*Mergus serrator*, Dall & Bann. p. 301.]

Only a few of these birds visited Michalaski, and did not remain to breed. A female was shot on the 24th of May; and on the 14th of June I shot a fine male out of a flock. On the same day I saw two other flocks; they were all flying northwards along the line of the sea-beach. According to the natives they are only met with occasionally in scattered flocks.

+ WILLOW-GROUSE. *Tetrao saliceti* (Swains.).

Ar-ko-zik-ook (winter plumage), *Ko-park-tok* (summer plumage), Eski.

[*Lagopus albus*, Dall & Bann. p. 287.]

This is the only Grouse found in the vicinity of Michalaski. It is met with in small and scattered packs about the hills in winter, until about the end of February, when several of the packs join and form one large one.

The first change of plumage I noticed was on the 3rd of May; it was a male bird, and had the greater part of the head and neck coloured.

They seem to breed principally about the numerous dry hills in the marshes. The eggs vary very much in colour. The ground is a pale stone-colour, and spotted and blotched with shades of brown, from a dark red-brown (almost a black) to a light yellowish brown.

The natives catch them in large numbers in the winter, by setting snares round a few bushes, amongst which they scatter berries. In summer they use a draw-net, 30 feet long by 15 inches high. This is placed on the brow of a hill where

a bird has been seen, and a stuffed bird placed near it, in a fighting attitude. A woman then secretes herself, and imitates the call, which is almost immediately answered; presently the bird makes its appearance, and alights by the side of his fancied opponent, drops his wings, spreads his tail, and struts round and round, until by one unlucky step he finds himself in the midst of the net. In this way native women take numbers whilst hunting about the marshes for eggs.

+ BROWN CRANE. *Grus canadensis*.

Túds-le-uk, Eski.

[*Grus canadensis*, Dall & Bann. p. 289.]

Several Cranes arrived with the earliest of the Geese in the beginning of May; and by the middle of the month the whole of the marshes were alive with them, and their noisy croakings were to be heard in every direction, especially about the extensive marshes on each side of the river. They had eggs before the end of the month. Their nests were placed about the dry knolls in the marshes. Their eggs have a brownish white ground, and are spotted with shades of brown and reddish grey. The spots are large, and principally about the large end, where they form an indistinct ring.

+ GOLDEN PLOVER. *Charadrius phuvialis*?

Too-zé-ek, Eski.

[*Charadrius virginicus*, Borkh.; Dall & Bann. p. 289.]

This bird appears to be distinct from the European species. It is smaller, has more naked thigh, and the axillary plume is ash-coloured, agreeing well with Mr. Yarrell's remarks. A few pairs arrived about the end of May. They appear to be very particular about the places they frequent. I found them only in two small detached pieces of marsh, about the wettest part of which they were feeding. They seemed to be breeding upon some dry spots near by; but I could not discover a nest.

+ TURNSTONE. *Strepsilas interpres*.

Chó-o-muk, Eski.

[Probably *S. melanocephala*, which, according to Dall and Bannister (p. 290), is common in St. Michael's.]

A few Turnstones made their appearance, in pairs, on the 31st of May. They frequented the salt marsh before mentioned, where I often found them sitting upon some logs of drift wood that overhung the water. They fed about the mud upon insects, worms, &c. ; but I never saw them on the sea-shore, nor in company with other birds.

+ RED-NECKED PHALAROPE. *Phalaropus hyperboreus*.
Cher-pók-lo-ok, Eski.

[*Lobipes hyperboreus*, Dall & Bann. p. 290.]

In the beginning of June a very few of these birds were to be met with in the pools about the salt marsh ; they were generally in the water, swimming about and picking the flies from the surface. I saw none of them at sea, and only one or two pairs in perfectly fresh water.

+ GREY PHALAROPE. *Phalaropus lobatus*.
I-im'-e-nuk, Eski.

[*Phalaropus fulicarius*, Dall & Bann. p. 291.]

Arrived on the 7th of June. Some of them kept to the sea-shore, often swimming out to sea ; but the majority frequented the salt-water marsh, keeping together in small flocks of six or eight. They have not the elegant movements of the other species, and were more often searching the mud with the Sandpipers. The natives told me that both the species breed there ; but I did not find their nests.

+ BROWN SNIFE. *Macrorhamphus griseus*.
Ki-o-kók-ar, *Tál-ik*, Eski.

[*Macrorhamphus griseus*, Dall & Bann. p. 291.]

Arrived on the 20th of May, and soon spread themselves over the marshes, singly and in pairs ; but the greater number of them frequented the salt marsh, where they fed about the mud in company with flocks of the Diminutive Sandpiper and Dunlin, which were the only birds I saw them associating with.

+ AMERICAN DUNLIN. *Tringa alpina*.
Cher-oó-me-nok, Eski.

[*Pelidna alpina*, var. *americana*, Dall & Bann. p. 291.]

A few of these birds frequented the salt marsh with flocks

of the Diminutive Sandpiper. They built their nests on the higher ground surrounding the marsh. They were very often hovering over their nests and singing a low twittering song. The nest was merely a few dry leaves scraped into a slight hollow. The eggs, four in number, are spotted with large spots of three shades of brown upon a light olive-green ground; the spots principally collected about the larger end. The small ends were always placed together in the nest, as with all the Waders.

+ DIMINUTIVE SANDPIPER. *Tringa pusilla*. [= *Actodromus minutillus*]

Lub-e-lub-e-luk-uk, Cloo-me-ár, Eski.

[*Actodromus minutillus*, Dall & Bann. p. 292.]

The first of these birds I met with as early as the 14th of April, while the snow yet covered the greater part of the surface of the ground; but it was not till the beginning of the following month that they became numerous. They almost solely confined themselves to the salt marsh and the muddy banks of the river where it was under the influence of the tide; here they were always to be found in flocks of fifty or a hundred, accompanied by a few Dunlins and Brown Snipes. I often sat on a log whilst they were feeding all around within a foot of me; but on my making the slightest movement, they were gone with a whisk and a twitter in an instant. Their nests were placed in the same situations as those of the Dunlins. The eggs are spotted with shades of olive-green, principally about the large end, upon a pale brownish ground.

+ HUDSONIAN GODWIT. *Limosa hudsonica*.

Pe-pé-pe-uk, Eski.

[*Limosa hudsonica*, Dall & Bann. p. 293.]

A few of these birds frequented the marshes on the river-banks, to which they exclusively confined themselves, feeding upon the numerous worms. The first I met with were feeding in some shallow pools, on the 21st of May.

My specimens agree well with Sir J. Richardson's descriptions, except that the female had no rufous colour on the

breast. The female is very considerably larger than the male. We found them afterwards at Port Clarence.

+ ARCTIC TERN. *Sterna arctica* (Gould).

Ter-kús-le-ko, T-uk, Eski.

[*Sterna macrura*, Naum. ; Dall & Bann. p. 306.]

A few pairs of these birds arrived on the 16th of May, and bred near Michalaski about the elevated dry spots in the marshes: one or two nests were found singly; but the others were together upon a dry knoll.

I saw one day at this colony a bird of much smaller size; but I had not my gun, and I saw no more of them. The natives say that there are two of them, one larger than the other, but that they rarely see the smaller one.

+ SABINE'S GULL. *Larus sabinii*.

Nud-júsh-ling-uk, Eski.

[*Xema sabinii*, Dall & Bann. p. 306.]

A few of these birds made their appearance about the marshes on the 7th of May; and a few pairs bred there. They were often feeding about the mud of the lakes; but I never saw them on the sea-shore. Their food consists of worms and insects. They are very bold, dashing at the head of any intruder upon their domain, like the Kittiwake; at other times they are rather shy and wary.

+ KITTIWAKE. *Larus tridactylus*.

Nor-o-yów-uk-chók, Eski.

[*Rissa tridactyla*, Dall & Bann. p. 305.]

This common bird made its appearance on the 6th of May; and some of them were always to be found about the marshes and on the sea-coast. They remained to breed in the marshes.

+ GLAUCOUS GULL. *Larus glaucus*.

Kok-é-ze-buk, Eski.

[*Larus glaucus*, Dall & Bann. p. 304.]

These birds were among the first to arrive; several of them were seen about the edge of the ice on May 22nd. They breed in the cliffs of some small islands near Michalaski, and were constantly to be met with about the sea-beach and hunt-

ing about the marshes. The natives value them for their quills, as they use the back of the shaft to attach fishing-lines to the hooks.

+ BUFFON'S SKUA. *Lestris parasiticus*.

Yúnge-uk, Eski.

[*Stercorarius buffoni*, Dall & Bann. p. 304.]

Arrived on the 7th of May, after which some of these birds were always to be found near the stages for drying fish; here they seem to live, principally by plundering them. Some of them frequented the marshes, hunting about for eggs, and robbing the Terns and small Gulls. They bred about the dry knolls in the marshes.

+ NORTHERN DIVER. *Colymbus glacialis*.

Too-oo-slik, Eski.

[*Colymbus adamsi*, G. R. Gray, P. Z. S. 1859, p. 167; Dall & Bann. p. 308.]

The natives kill numbers of these birds at sea during the autumn. They have plenty of skins, both of old and young, which they convert into bags for their tools. I saw none of the birds myself; and the natives told me they did not arrive before the end of August.

+ BLACK-THROATED DIVER. *Colymbus arcticus*.

Tun-oo-slik, Eski.

[*Colymbus arcticus*, Dall & Bann. p. 307.]

A few of these handsome birds were always to be met with after the first week in June in the shallow bays along the coast, where they keep up a continual screaming throughout the day. They are said to breed here; but I got none of their eggs, nor did I ever see them about the marshes and lakes inland.

+ RED-THROATED DIVER. *Colymbus septentrionalis*.

Kok-ár-uk and *Kok-á-nok*, Eski.

[*Colymbus septentrionalis*, Dall & Bann. p. 307.]

The first of these birds arrived on the 21st of May; and soon afterwards most of the larger lakes had at least one pair of them as tenants. They seldom went out to sea, apparently

only to feed, but were continually flying about the marshes, and diving and screaming upon the lakes. This species is a complete mocking bird, at least of harsh sounds; its cry often sounds like the squalling of a cat, the barking of a dog, the harsh laugh of a man, or the quacking of a duck, sometimes of all these united into one loud scream, as it dives into the lake in play.

Their nests were numerous, and generally placed quite close to the water on the banks of the lake; they consisted merely of a little loose grass pulled into a hollow; but some few were more carefully formed, though none of them were lined with feathers or down. The eggs, two in number, were of an olive-greenish colour, thinly spotted with dark brown; in some most of the spots were collected about the large end, in others not so.

+ CRESTED AUK. *Phaleris cristatella*.

Túb-e-uk, Eski.

[*Phaleris cristatella*, Dall & Bann. p. 309.]

Two of these birds were picked up at sea by a native on the 14th of June. They were weak and half starved, but with no marks of injury about them. I saw none except these; but they are occasionally met with by the natives at some distance from the shore. The Esquimaux about Kotzebue Sound and Port Clarence use the small orange-coloured plates at the base of the bill for ornamenting their waterproof frocks; and, from the great number attached to one frock, there must be extensive breeding-places somewhere in that vicinity.

The time of observation on these birds extended from October 1850 to the end of June 1851, at which time most of the birds had eggs nearly ready for hatching; but no young birds had appeared. The above list includes every bird, I believe, that visited the immediate vicinity of Michalaski during that period.